IN THE CLAIMS

Please amend claims 1, 3, 7, 8, 13, 14, 15, 27, 28 as follows:

1. (Currently Amended) A method for signal-conditioning utilizing a signal-conditioning circuit, said method comprising the steps of:

applying an offset correction voltage to a noninverting input of an amplifier of said signal-conditioning circuit; and

applying a magnetoresistor half-bridge signal to an inverting input of said amplifier of said signal-conditioning circuit, wherein said offset correction voltage at said noninverting input drives ~~compensates to drive~~ an output voltage of said signal-conditioning circuit to an input voltage, which is divided by a value of two, thereby generating a resulting voltage value, which is utilized to automatically calibrate said magnetoresistive half-bridge signal for temperature compensation purposes ~~by calibration for temperature compensation thereof by said signal-conditioning circuit~~.

2. (Original) The method of claim 1 further comprising the step of:

configuring said signal-conditioning circuit to comprise an InSb signal-conditioning circuit.

3. (Previously Amended) The method of claim 1 further comprising the step of:

configuring said signal-conditioning circuit as a circuit comprising:

a noninverting signal input for application of offset correction voltages;

an inverting input for application of magnetoresistor half bridge signals for temperature compensation thereof.

4. (Previously Amended) The method of claim 1 further comprising the step of:

generating said magnetoresistor half-bridge signal utilizing at least one magnetoresistor.

5. (Previously Amended) The method of claim 1 further comprising the step of:

generating said magnetoresistor half-bridge signal utilizing a plurality of magnetoresistors.

6. (Previously Amended) The method of claim 1 further comprising the step of:

connecting at least two magnetoresistors to one another at a first node and at least two other magnetoresistors to one another at a second node, wherein said second node is connected to a positive input of said amplifier of said signal-conditioning circuit.

7. (Currently Amended) The method of claim 1 further comprising the step of:

coupling a first magnetoresistor ~~coupled~~ to a second magnetoresistor at a first node, wherein said first magnetoresistor is coupled to a supply voltage and said second magnetoresistor is coupled to a ground.

8. (Currently Amended) The method of claim 7 further comprising the step of:

coupling ~~comprise~~ a first resistor coupled to a second resistor at a second node, wherein said first resistor is coupled to said supply voltage and said second

resistor is coupled to said ground, such that said second node is coupled to a positive input of said amplifier.

9. (Original) The method of claim 8 further comprising the step of:

configuring said signal-conditioning circuit to comprise a third resistor coupled to said first node and to a third node, wherein said third node is connected to a negative input of said amplifier.

10. (Original) The method of claim 9 further comprising the step of:

configuring said signal-conditioning circuit to comprise a fourth resistor coupled to said third node and to an output of said amplifier.

11. (Previously Amended) The method of claim 1 further comprising the step of:

configuring said signal-conditioning circuit to comprise at least one magnetoresistor in series with at least one resistor connected to an inverting input of an amplifier of said signal-conditioning circuit;

wherein said at least one magnetoresistor comprises an InSb magnetoresistor that exhibits a negative scale factor temperature coefficient; and

wherein at least one magnet of said signal-conditioning circuit exhibits a negative scale factor temperature coefficient to thereby permit a gain of said amplifier to increase.

12. (Previously Amended) The method of claim 11 further comprising the step of:

configuring said at least one resistor to comprise a fixed temperature coefficient resistor.

13. (Currently Amended) The method of claim 12 further comprising the step of:

choosing said fixed ~~low~~ temperature coefficient resistor in series with said at least one magnetoresistor to thereby obtain a flat resultant temperature coefficient thereof dependent upon said fixed ~~low~~ temperature coefficient resistor.

14. (Currently Amended) A method for signal-conditioning utilizing a signal-conditioning circuit, said method comprising the step of:

applying an offset correction voltage to a noninverting input of a signal-conditioning circuit;

applying a magnetoresistor half-bridge signal to an inverting input of said signal-conditioning circuit, wherein said offset correction voltage at said noninverting input drives ~~compensates to drive~~ an output voltage of said signal-conditioning circuit to an input voltage, which is divided by a value of two, thereby generating a resulting voltage value, which is utilized to automatically calibrate said magnetoresistive half-bridge signal for temperature compensation purposes ~~for temperature compensation thereof by said signal-conditioning circuit~~;

configuring said signal-conditioning circuit to comprise at least one magnetoresistor in series with at least one resistor located in an inverting input of an amplifier associated with said signal-conditioning circuit;

wherein said at least one magnetoresistor exhibits a negative scale factor temperature coefficient; and

wherein an associated magnet exhibits a negative scale factor temperature coefficient to thereby permit a gain of said amplifier to increase with temperature.

15. (Currently Amended) A system for signal-conditioning utilizing a signal-conditioning circuit, said system comprising:

an offset correction voltage applied to a noninverting input of a signal-conditioning circuit;

a magnetoresistor half-bridge signal applied to an inverting input of said signal-conditioning circuit, wherein said offset correction voltage at said non-inverting input drives ~~compensates to drive~~ an output voltage of said signal-conditioning circuit to an input voltage, which is divided by a value of two, thereby generating a resulting voltage value, which is utilized to automatically calibrate said magnetoresistive half-bridge signal for temperature compensation purposes ~~by calibration for temperature compensation thereof by said signal-condition circuit~~.

16. (Original) The system of claim 15 wherein said signal-conditioning circuit comprises an InSb signal-conditioning circuit.

17. (Previously Amended) The system of claim 15 wherein said signal-conditioning circuit comprises:

a noninverting signal input for application of offset correction voltages;

an inverting input for application of magnetoresistor half bridge signals for temperature compensation thereof.

18. (Previously Amended) The system of claim 15 wherein said magnetoresistor half-bridge signal is generated utilizing at least one magnetoresistor configured within said signal-conditioning circuit.

19. (Original) The system of claim 15 wherein said magnetoresistor half-bridge signal is generated utilizing a plurality of magnetoresistors configured within said signal-conditioning circuit.

20. (Previously Amended) The system of claim 15 wherein at least two magnetoresistors are connected to one another at a first node and at least two other magnetoresistors to one another at a second node, wherein said second node is connected to a positive input of said amplifier of said signal-conditioning circuit.

21. (Original) The system of claim 15 wherein said signal-conditioning circuit comprises a first magnetoresistor coupled to a second magnetoresistor at a first node, wherein said first magnetoresistor is coupled to a supply voltage and said second magnetoresistor is coupled to a ground.

22. (Original) The system of claim 21 wherein said signal-conditioning circuit comprises a first resistor coupled to a second resistor at a second node, wherein said first resistor is coupled to said supply voltage and said second resistor is coupled to said ground, such that said second node is coupled to a positive input of said amplifier.

23. (Original) The method of claim 22 wherein said signal-conditioning circuit comprises a third resistor coupled to said first node and to a third node, wherein said third node is connected to a negative input of said amplifier.

24. (Original) The system of claim 23 wherein said signal-conditioning circuit comprises a fourth resistor coupled to said third node and to an output of said amplifier.

25. (Original) The system of claim 15 wherein:

said signal-conditioning circuit comprises at least one magnetoresistor in series with at least one resistor located in an inverting input of an amplifier associated with said signal-conditioning circuit;

wherein said at least one magnetoresistor comprises an InSb that exhibits a negative scale factor temperature coefficient; and

wherein an associated magnet exhibits a negative scale factor temperature coefficient to thereby permit a gain of said amplifier to increase with temperature.

26. (Original) The system of claim 25 wherein said at least one resistor comprises a fixed temperature coefficient resistor.

27. (Currently Amended) The system of claim 26 wherein said fixed ~~low~~ temperature coefficient resistor is chosen in series with said at least one magnetoresistor to thereby obtain a flat resultant scale factor temperature coefficient thereof dependent upon said fixed ~~low~~ temperature coefficient resistor.

28. (Currently Amended) A system for signal-conditioning utilizing a signal-conditioning circuit, said system comprising:

an offset correction voltage applied to a noninverting input of a signal-conditioning circuit;

a magnetoresistor half-bridge signal applied to an inverting input of said signal-conditioning circuit;

a voltage <u>electronically</u> compensated at said noninverting input<u>, wherein a resulting compensated voltage drives</u> ~~to drive~~ an output voltage of said signal-conditioning circuit to an input voltage <u>that is</u> divided by a value of two <u>during a</u> calibration thereof;

wherein said signal-conditioning circuit is configured to comprise at least one magnetoresistor in series with at least one resistor connected to an inverting input of an amplifier of said signal-conditioning circuit;

wherein said at least one magnetoresistor exhibits a negative scale factor temperature coefficient; and

wherein at least one magnet of said signal-conditioning circuit exhibits a negative scale factor temperature coefficient to thereby permit a gain of said amplifier to increase with temperature.

29. (Previously Cancelled)